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RESTRICTION AND PREVENTION
OF
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DIPHTHERIA.

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No date
on this.
Perhaps 1871?

RESTRICTION AND PREVENTION OF DIPHTHERIA.

CAUTIONS AND SUGGESTIONS BY THE MICHIGAN STATE BOARD OF HEALTH.

Because Diphtheria has been and may be expected again to be widely prevalent, and is a formidable and fatal disease, and because it is believed to be a disease very largely preventable, the State Board of Health desires to disseminate as widely as possible among the people of this State, the knowledge of certain facts and principles which seem to be well established, as to the nature and causes of the disease, and the rational means for its restriction and prevention.

NATURE OF THE DISEASE.

Diphtheria is, primarily or secondarily, a constitutional, or blood-poisoning disease. It attacks persons of all classes and ages, but most frequently children under sixteen years of age.

In ordinary cases the poisonous principle of Diphtheria probably enters the blood by way of the mouth and the air passages.

The period of incubation of Diphtheria, or the time from a person's exposure to the disease to his coming down with it, varies somewhat,—being usually from a few hours to seven or eight days; in some cases, it is twelve or fourteen days.

Its most frequent local manifestations are in the mouth, throat, and air passages. When in the mouth or upper part of the throat only, the disease is, as a rule, less dangerous and fatal, but none the less contagious, than when in the air passages, below the fauces.

The specific contagium developed by the disease itself, and by which it spreads, is diffused by the exhalations (breath, perspiration, etc.) of the patient, through the air immediately surrounding him, as well as by clothing or other solid substances that have been brought into contact with the products of the disease.

As a rule, the virulence or malignancy of the contagium is in direct proportion to the severity of the case from which it emanates, though malignant cases may result from exposure to a mild case.

The more this contagium is allowed to accumulate in the room where the patient lies, the more powerful does it become.

RESTRICTION OF DIPHTHERIA.

Diphtheria is a Contagious Disease, and hence the strict observance of the following precautions is of very great importance.

1. Every person known to be sick with this disease should be promptly and effectually isolated from the public;—one or two persons only should take the entire charge of the patient, and they should be restricted in their intercourse with other persons.

2. The room into which one sick with Diphtheria is placed should previously be cleared of all needless clothing, carpets, drapery, and other materials likely to harbor the poison of the disease. This room should constantly receive a liberal supply of fresh air, without currents or drafts directly upon the patient. It will be well also to have the sun shine directly into the room.

3. In order that the guardians of the public health may have early warning, **it is important that every case of Diphtheria be promptly reported to the local board of health.**

4. The duties of Householders, Physicians, and Boards of Health, as specified in sections 1734, 1735, 1732, and 1695 of the Compiled Laws of Michigan, 1871, should be rigidly enforced.† These duties are as follows:

“(1734.) SEC. 43. Whenever any *householder* shall know that any person within his family is taken sick with the small-pox, or any other disease dangerous to the public health, he shall immediately *give notice thereof to the Board of Health*, or to the *health officer* of the township [city or village*] in which he resides; and if he shall refuse or neglect to give such notice, he shall forfeit a sum not exceeding one hundred dollars.”†

“(1735.) SEC. 44. Whenever any *physician* shall know that any person whom he is called to visit is infected with the small-pox, or any other disease dangerous to the public health, such physician shall immediately *give notice thereof* to the Board of Health or health officer of the township [city or village*] in which such diseased person may be; and every physician who shall refuse or neglect to give such notice, shall forfeit, for each offense, a sum not less than fifty nor more than one hundred dollars.”†

“(1732.) SEC. 41. When the small-pox, or any other disease dangerous to the public health, is found to exist in any township, the board of health shall use all possible

* See Sec. 1740 Compiled Laws 1871.

† Supervisors must prosecute for all such forfeitures, township officers must give notice to supervisor, prosecuting attorney must conduct suit if requested,—see sections (6852), (6853), and (6855), Compiled Laws of Mich., 1871.

care to prevent the spreading of the infection, and to give public notice of infected places to travelers, by such means as in their judgment shall be most effectual for the common safety."

"(1895.) SEC. 4. The said board shall also make such regulations as they may deem necessary for the public health and safety, respecting any *articles which are capable of containing or conveying any infection or contagion or of creating any sickness*, when such articles shall be brought into or conveyed from, their township, or into or from any vessel; and if any person shall violate any such regulation he shall forfeit a sum not exceeding one hundred dollars."

The general laws of this State provide that the mayor and aldermen of cities and the president and council or trustees of villages "shall have and exercise all the powers, and perform all the duties of a board of health as provided in this chapter." This is in chapter 46, sec. (1740) 49, Compiled Laws of 1871, from which chapter all of the foregoing sections are taken. See also, in Laws of Mich., 1873, the general act for the incorporation of cities, chapter XIV., sections 1, 7, and 8.

It therefore appears that, except possibly some special charter may exempt a city or village, the foregoing provisions of law are probably applicable and in force in the cities and villages, as well as in all the townships, throughout the State.

5. The discharges from the throat, nose, and mouth are extremely liable to communicate the disease, and should be received on soft rags or pieces of cloth which should immediately be burned.

6. The discharges from the kidneys and bowels are also dangerous, and should be passed on old cloths and burned, or into vessels kept thoroughly disinfected by nitrate of lead, chloride of zinc, or sulphate of iron (copperas), and then be *buried* at least 100 feet distant from any well.

Copperas, dissolved in as little hot water as will dissolve it, is a good disinfectant for this purpose.

7. Nurses and attendants should be required to keep themselves and their patient as clean as possible;—their own hands should frequently be washed and disinfected by chlorinated soda.

8. Soiled bed and body linen should at once be placed in boiling water or in water containing chlorinated soda, chlorinated lime, or solution of chloride of zinc.

9. All persons recovering from Diphtheria should be considered dangerous, and therefore no such person should be permitted to associate with others or to attend school, church, or any public assembly, until in the judgment of a careful and intelligent physician he can do so without endangering others.

10. The body of a person who has died of Diphtheria, should as early as practicable be placed in the coffin, with disinfectants, and

the coffin should then be tightly closed. Afterwards, the body should not be exposed to view except through glass.

11. No public funeral should be held at a house in which there is a case of Diphtheria, nor in which a death from Diphtheria has recently occurred. No children at least, and it would be better in most cases that few adults, should attend such a funeral.

12. The room in which there has been a case of Diphtheria, whether fatal or not, should, with all its contents, be thoroughly disinfected by exposure for several hours to strong fumes of chlorine gas, or of burning sulphur, and then, if possible, it should for several days, be exposed to currents of fresh air.

To disinfect an ordinary room with chlorine gas: having tightly closed all the openings of the room, place in it an open earthen dish containing four ounces of peroxide of manganese. Pour on this one pound of strong muriatic acid, being careful not to breathe the fumes. When certain that continuous evolution of chlorine is taking place, leave the room and close the door.

To generate Sulphurous Acid gas, put live coals on top of ashes in a metallic pan, and place on the coals sulphur in powder or fragments.

A convenient way is to place the coals and sulphur on a heated stove plate or cover turned bottom upward in a pan half filled with ashes. To disinfect 100 cubic feet of air requires the thorough burning of about one and one-half ounces of sulphur.

13. After a death or recovery from Diphtheria, the clothing, bedding, carpets, mats, and other cloths which have been exposed to the contagium of the disease should either be burned, exposed to superheated steam, to a degree of dry heat equal to 240° F., or be thoroughly boiled.

The foregoing methods of disinfection are applicable in all contagious diseases.

PREVENTIVE MEASURES.

14. Avoid the special contagium of the disease.

15. Beware of crowded assemblies in ill-ventilated rooms.

All influences which depress the vital powers, and vitiate the fluids of the body, tend to promote the development and spread of this disease. Among these influences, perhaps the most common and powerful are, *impure air* and *impure water*. Because of this, and as a means of lessening the danger of contracting almost all other diseases, the following precautions should always be taken, but more particularly during the prevalence of any such disease as this.

16. The grounds under and around the house should be well drained.

17. No vegetable or animal matter should be allowed to decompose on the surface of the ground near the house.

18. If any soap-factory, slaughter-house, rendering establishment, or other source of foul odors, contaminate the air which you and your children daily breathe, take immediate measures through your local board of health or health officer to have such nuisance abated.

19. Your **own privy** especially, should at all times be thoroughly disinfected, by dry earth, coal ashes, or copperas-water; and the receptacle should be so constructed as to be water-tight and to be tightly covered when removed to be emptied, as it should be often enough to prevent the air about it from becoming offensive, and in cold weather so far as possible.

20. Your whole **house** and especially its sleeping rooms **should be well ventilated.**

21. Your **cellar should be dry** and well ventilated, it should frequently be whitewashed, and always kept clear of decomposing vegetable or other substances.

22. No cesspool should be allowed near the house. If there be one, it should either be removed or be thoroughly and frequently disinfected with sulphate of iron (copperas).

23. Your **house drains** should be looked to with scrupulous care, to see that they are well trapped, kept clear, and ventilated into the open air.

24. Your house should not have uninterrupted connection with a sewer. Be sure that the waste-pipes do not permit the entrance of sewer gas into the house, but that they enter the sewer through an open-air space, or at least through a space freely ventilated to the open air.

25. Be sure that your **drinking-water** is not contaminated by surface drainage, nor by leakage from the drain, gas-pipes, sewer, cesspool, or vault.

The foregoing document, planned by Homer O. Hitchcock, M. D., assisted by other members of this Board, is published by the State Board of Health for distribution throughout the State.

In order that the document may do the greatest possible good, it is hoped that each one who receives it will not only make such use of it as will tend to disseminate most widely the suggestions and statements of fact contained therein, but will also *act for the restriction or prevention of this disease* in accordance with its suggestions, or by other effective measures.

Any communication on the subject may be addressed to, OFFICE OF STATE BOARD OF HEALTH, LANSING, MICHIGAN.

**After reading this document carefully,
please preserve it for future reference.**